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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/854,932	05/15/2001	Yu Wang	839-1004	7943

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EXAMINER

NGUYEN, HANH N

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 07/31/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/854,932

Applicant(s)

WANG ET AL.

Examiner

HANH NGUYEN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16-21 is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities: Ref (31) and (40) in Page 12, lines 10 and 16 should be --(39) and (41)--- respectively. *OK*

Appropriate correction is required.

### *Drawings*

2. The drawings are objected to under 37 CFR 1.83(a) because they fail to show reference signs as described in the specification: (79) in Page 10, line 20. *OK* (66) in Page 21, line 17. *OK* (68) in Page 22, line 12. *OK* (36) and (38) in Page 24, line 5 and 6. *OK* "a channel to receive the coil winding 34" as described in Page 21, lines 20 and "channel 58 to receive the end sections of the coil windings" in Page 18, line 10 was not shown in drawings. *OK* Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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3. Claims 1-5, 10,12,13 are rejected under 35 U.S.C. 102(b) as being anticipated by Driscoll et al.

Regarding claim 1, Driscoll et al. disclose a rotor (20 in Fig. 2) for a synchronous machine comprising: a rotor core having a rotor axis (shaft 22); a pair of super-conducting coil windings (32 in Fig. 3) mounted on the rotor core, each of said coil windings in a respective plane that is parallel to and offset from the rotor axis.

Regarding claim 2, Driscoll et al. also disclose a rotor for a synchronous machine wherein the superconducting coils (32 in Fig. 3) have a race-track shape.

Regarding claim 3, Driscoll et al. also disclose a rotor for a synchronous machine wherein the superconducting coils (32) each have a pair of opposite side sections (the long side portion) that are parallel to the rotor axis and a pair of end sections adjacent to an end of the rotor core.

Regarding claim 4, Driscoll et al. also disclose a rotor for a synchronous machine wherein the rotor core has recessed surfaces (30 in Fig. 2) extending longitudinally along the rotor core and said recessed surfaces receive the coil windings (Col. 3, lines 23-28).

Regarding claim 5, Driscoll et al. also disclose a rotor for a synchronous machine wherein the superconduction coils are included a high temperature super-conducting (HTS) wire extending around the entire coil (Col.3, lines 34-35).

Regarding claim 10, Driscoll et al. also disclose a rotor for a synchronous machine wherein the rotor core includes a ridge (portion between grooves 30) separating the coil windings.

Regarding claim 12, Driscoll et al. also disclose a rotor for a synchronous machine wherein the coil windings are on opposite sides of the rotor axis, and an equal distance separates the plane for each of said coil windings and the rotor axis (Fig. 4).

Regarding claim 13, Driscoll et al. also disclose a rotor for a synchronous machine wherein the planes for each of said coil windings are parallel to each other, and the rotor axis is between said planes (Fig. 3 and 4).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Driscoll et al. in view of Kalsi.

Regarding claim 9, Driscoll et al. show all limitations of the claimed invention except showing the rotor core is an iron body.

However, Kalsi discloses a rotor structure wherein the rotor core is formed of a high permeability material, such as iron (Col. 3, lines 54-57) for the purpose of saturating flux density.

Since Driscoll et al. and Kalsi are in the same field of endeavor, the purpose disclosed by Kalsi would have been recognized in the pertinent art of Driscoll et al.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Driscoll et al. by using iron instead of

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aluminum to form the rotor core as taught by Kalsi for the purpose of saturating flux density.

5. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Driscoll et al. in view of Laskaris.

Regarding claims 14, Driscoll et al. show all limitations of the claimed invention except showing the rotor wherein the coil are saddle coil.

However, Laskaris discloses a rotor structure wherein the coils are saddle-shape coils for the purpose of reducing frictional heat (Col. 1, lines 15-25).

Since Driscoll et al. and Laskaris are in the same field of endeavor, the purpose disclosed by Laskaris would have been recognized in the pertinent art of Driscoll et al.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Driscoll et al. by forming coils having saddle shape as taught by Laskaris for the purpose of reducing frictional heat.

Regarding claim 15, Laskaris also discloses a rotor structure further comprising saddle coil housings (11 in Fig. 1 and 2) that each bracket side sections of both coils (Col. 4, lines 9-18).

6. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Driscoll et al. in view of Ueda et al.

Regarding claims 6,7, Driscoll et al. show all limitations of the claimed invention except showing the rotor further comprising tension rods extending between and connecting the coil windings and the tension rods are extending through conduits in the rotor core.

However, Ueda et al. disclose a rotor structure comprising tension rods (36 in Fig. 3 and 4) extending between and connecting the coil windings (14) and the tension rods are extending through conduits in the rotor core for the purpose of securing the coils to the rotor (by means of the wedges 24 as explained in Col. 4, lines 30-40).

Since Driscoll et al. and Ueda et al. are in the same field of endeavor, the purpose disclosed by Ueda et al. would have been recognized in the pertinent art of Driscoll et al.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Driscoll et al. by using tension rods extending between and connecting the coil windings and the tension rods are extending through conduits in the rotor core as taught by Ueda et al. for the purpose of securing the coils to the rotor.

Regarding claims 8, Ueda et al. also disclose a rotor structure wherein the tension rods are perpendicular to the respective planes of the coils (Fig. 5).

***Allowable Subject Matter***

7. Claims 16-21 are allowed.
8. The following is a statement of reasons for the indication of allowable subject matter: the record of prior art does not show a rotor for a synchronous machine comprising a first and a second super-conducting coil mounted on the rotor core with a plurality of first tension rods spanning and connecting opposite side sections of each of said coil windings and a plurality of second tension rods spanning between and connecting both of the coil windings.

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***Conclusion***

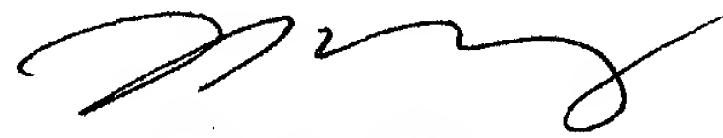
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh N Nguyen whose telephone number is (703) 305-3466. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

HNN

July 26, 2002

  
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SUPERVISORY PATENT EXAMINER  
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